DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rettig et al. (USP 3321563) in view of Pottorf (USP 5700489).

In regards to claim 1, Rettig discloses a blown film extrusion system (Figure 1) which utilizes a blowing head (Figure 1: 1), a pinch-off device (Figure 1: 4), and a film guide (Figure 1: 8) between the extrusion head and the pinch-off device, the film guiding

elements containing a porous material (Column 3, line 18) that allows a cooling air to pass through. In the invention of Rettig, the guiding element has a fixed radius.

Pottorf discloses constructing a film guiding and cooling (Column 5, lines 23-24) element out of several pieces (Figure 3: 30) that can be moved radially (Column 4, lines 45-46) for the benefit of being able to adjust the apparatus to create blown films products of various sizes (Column 4, lines 46-47). Therefore, it would have been obvious to modify the film-guiding element of Rettig so that it was comprised of multiple pieces that could be moved radially to accommodate products with different diameters (as disclosed by Portoff) for the benefit of being able to produce multiple products from the same apparatus.

In regards to claim 2, Rettig further discloses that the porous material be sintered (Column 3, line 31).

In regards to claim 3, Rettig further discloses that the porous material be metallic (Column 3, line 30).

In regards to claim 4, Rettig further discloses that the porous material be disposed between a compressed air reservoir and the film (Figure 1: 7) so that the compressed air travels through the porous material and impinges on the blown tube (Column 3, lines 17-19).

In regards to claim 10, Rettig further discloses that the porous material is arranged in the region of the calibration cage (Column 3, lines 30-31)

In regards to claim 18, Rettig further discloses the use of bronze (Column 3, line 30) in the guiding element.

Claims 5-9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the previous combination of Rettig et al. (USP 3321563) in view of Pottorf (USP 5700489) as applied to claim 1 above, and further in view of Meyer (DE 20309929 note that USP 7025303 is taken to be an English language equivalent of the foreign reference and used to make the following rejections).

In regards to claims 5 and 6, applicant requires that the sintered material have a thickness between 1 and 10mm and then 2 and 5mm respectively. Rettig does not disclose this. Although Rettig discloses using a material with a thickness of 30 mm (Column 4, line 13), this is stated to be merely exemplary (Column 3, line 69), suggesting to one of ordinary skill in the art that any well known thickness for passing air through a porous material would be suitable.

Meyer (USP 7025303) discloses that it is well known in the art to use a microporous layer with a thickness between 0.5 to 2.0 mm (Column 3, lines 35-36) for the benefit of achieving a desirable distribution in the air flow (Column 3, lines 37-38). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to combine the apparatus for using sintered material to guide a blown film (as disclosed By Rettig) with the feature of giving the material a thickness between 0.5 and 2.0mm (as disclosed by Meyer) for the benefit of this being a well known thickness in the art for ensuring a distributed air flow.

In regards to claims 7, 8, 9, and 17 Applicant requires that the pore size be between 5 and 100 μm, 10 and 60 μm, and 20 and 45 μm respectively. Rettig does not disclose this.

Meyer discloses that it is well known in the art to have pore sizes between 5 and 100 μm (Column 3, line 56) for the benefit of creating an even air cushion (Column 3, lines 30-31). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the pore sizes of Meyer for the film guiding element of Rettig for the benefit of Meyer disclosing well known pore sizes for creating even air distribution.

Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the previous combination of Rettig et al. (USP 3321563) in view of Pottorf (USP 5700489) as applied to claim 1 above, and further in view of Bustin et al. (USP 4408970).

In regards to claims 10 and 11, Pottorf further discloses that in order to be adjustable, the calibration cage be broken into plates (Column 5, line 55). It is the

examiner's position that the cushion of cooling air surrounding the extruded film in the process of Rettig is centering the blown film in the cooling ring and therefore acting as a calibration cage.

In any event, Bustin discloses that it is well known in the art to utilize an air cushion as a calibration cage in the cooling region of the blown film apparatus (Abstract) for the benefit of increasing the production rate of the process (Column 1, lines 33-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the cooling ring of the previous combination in a calibration cage (as disclosed by Bustin) for the benefit of increasing the throughput of the apparatus. Note that in the previous combination, the porous material needs to be directed towards the film so that the air will impinge on the film.

In regards to claim 12, Pottorf further discloses that the plates be staggered (Fiugre 3).

Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rettig et al. (USP 3321563) in view of Pottorf (USP 5700489) and Bustin et al. (USP 4408970).

In regards to claim 19, Rettig discloses a film extrusion system (Figure 1) with a blowing head (Figure 1: 1), a pinch-off device (Figure 1: 4), and a cooling ring

comprised of porous material (Figure 1: 8), which guides the film between the extrusion head and pinch-off device. Rettig does not disclose a radially adjustable calibration cage. The cooling ring of Rettig has a fixed diameter.

Portoff discloses that by breaking a cooling (Column 5, lines 23-25) structure of a blown film process into plates (Column 5, lines 54-55), that are movable in the radial direction to define blown films with different diameters (Column 4, lines 45-47), the elements guiding the tube along a desired path (Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to break the cooling ring or Rettig into several radially movable plates arranged circumferentially around the blow film (as disclosed by Portoff) for the benefit being able to product multiple blow film products from the same apparatus. It is the examiner's position that the cushion of air disclosed in the process of Rettig centers the extruded film in the ring and therefore acts as a calibration cage.

In any event, Bustin discloses that it is well known in the art to utilize an air cushion as a calibration cage in the cooling region of the blown film apparatus (Abstract) for the benefit of increasing the production rate of the process (Column 1, lines 33-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the cooling ring of the above combination in a calibration cage (as disclosed by Bustin) for the benefit of increasing the throughput of the apparatus.

In regards to claim 20, Rettig further discloses supplying air to the blown film through the use of compressed air reservoirs (Column 3, lines 54-55).

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over the previous combination of Rettig et al. (USP 3321563) in view of Pottorf (USP 5700489) and Bustin et al. (USP 4408970) as applied to claim 19 above, and further in view of Joseph (Pre-Grant Publication 2002-0076459).

In regards to claims 21, Portoff is silent as to how the adjustable segments are moved radially, suggesting to one of ordinary skill in the art at the time of the invention that any well known method of adjusting the size of a calibration cage would be acceptable.

Joseph discloses that it is well known in the art to use a motor to adjust the size of a calibration cage in a film blowing process ([0009]). Therefore, one of ordinary skill in the art at the time of the invention would have found it obvious to utilize a motor (as disclosed by Joseph) to arrange the adjustable segments of the previous combination for the benefit of this being a well known method of adjusting radially movable parts in a blown film process.

Response to Arguments

2. Applicant's arguments filed 12/18/2009 have been fully considered but they are not persuasive.

3. In regards to claims 1-4, 10 and 18, Applicant argues that the combination of Rettig and Pottorf is improper because Rettig is concerned with using a porous material of fixed diameter to guide air against a blown film and Pottorf is directed towards radially adjusting a plated sizing cage which physically contacts the blown film at its surface rather than creating an air cushion. Applicant argues on page 11 that one of ordinary skill would not turn to the disclosure of Pottorf because Rettig and Pottorf teach very different materials from one another for guidng the extruded film. The examiner respectfully disagrees and submits that Pottorf is relevant because it is directed to the same field of endeavor of blowing films as well as directed towards the same problem of guiding a blown film. In response to applicant's argument that Rettig and Pottorf are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the two references are both in the same field of endeavor and concerned with the same problem.

Applicant emphasizes on page 12 and 13 of the remarks that Pottorf is especially concerned with a low-friction plastic wear cover, whereas Rettig is concerned with an air cushion formed from a porous material which prevents contact of the film with the sizing cage. The examiner notes that Applicant appears to be arguing the references individually. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the

rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Although Pottorf may use a different material for the sizing cage, one applying the teachings of Pottorf to the invention of Rettig would find it obvious to break the sizing cage of Rettig into radially moving parts for the benefits discussed in the rejection above. In doing so, a porous sizing cage made out of relatively movable plates would be created.

The examiner would like to make two additional points in regards to Applicant's arguments: The first is that as emphasized by Applicant on pages 12 and 13, Pottorf is concerned with reducing friction in the sizing cage. As cited by Applicant on page 13 of the remarks, Pottorf lists several exemplary low-friction materials for use in the sizing cage, suggesting to one of ordinary skill in the art that any well known low-friction configuration for blown film sizing would be suitable. The air cushion of Rettig produces a contactless, and therefore very low friction path for the film to follow. One of ordinary skill therefore would have found it obvious to use the teachings of Portoff with the low-friction cage of Rettig. Secondly, *Technology of Plastics Packaging for the Consumer Market* (hereinafter TPPCM) provides evidence that low-friction surfaces and air cushions are considered by the skilled artisan to be functionally equivalent for use in sizing cages, including radially adjustable cages (Section 8.2.6.2).

Conclusion

4. This is a Request for Continued Examination of applicant's earlier Application No. 10/591836. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARTIN ROGERS whose telephone number is 571-270-7002. The examiner can normally be reached on Monday through Thursday, 7:30 to 5:00, and every other Friday, 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Martin Rogers/

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